

REMARKS

On page 2 of the Office Action, claim 14 was rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the enablement requirement. In particular, the Examiner alleges that the specification does not enable said clock extracting unit to be simultaneously provided for each of the plurality of signals lights as well as shared with two or more of the signal lights.

Applicants respectfully submit that the specification allows one of ordinary skill in the art to make and use the present invention without undue experimentation, and is, therefore, enabled. In particular, as is clearly illustrated in FIG. 12 of the specification of the present invention, for example, the clock extracting unit 10A is simultaneously provided for each of the plurality of signal lights indicated in the figure. The clock extracting unit 10 is also shared with two or more of the depicted signal lights. See FIG. 12. See also page 18, line 27 – page 19, line 16.

In light of the foregoing, withdrawal of the rejection is respectfully requested.

On page 3 of the Office Action, claims 1-3 and 5-15 were rejected under 35 U.S.C. § 103 (a) as allegedly being unpatentable over the background section of Applicants' specification in view of U.S. Patent No. 7092643 (Kajiy).

The Examiner has alleged in the Office Action that Applicants' background section (in particular, Fig. 15, and page 3, line 15 through page 4, line 9) discloses two EA modulators used as an on/off gate in order to separate one signal light included in a TDM signal light. According to the Examiner, Applicants' background section fails to disclose that a drive signal for the first modulator has a repetition frequency equal to that of the bit rate of the signal light and has the voltage amplitude corresponding to a voltage difference in an $n/2$ period in the periodic optical transmission characteristics of the first optical modulator. The Examiner further alleged that Kajiy discloses, at column 1, lines 18-65, the EA optical modulator for the TDM transmitting where the EA optical modulator is used as the on/off gate, and where the output signal frequency of the modulator is twice the driving signal input frequency when the modulation factor is doubled. The Examiner concluded that it is allegedly obvious to double the modulation factor by using an MZ optical modulator instead of the first EA modulator indicated in Applicants' background section.

Applicants respectfully submit that the Examiner appears to assert that in the EA modulator, optical transmission characteristics with respect to a drive voltage, is periodically

changed (see page 3, line 7-12 of the Office Action). As indicated in the specification of the present application, for example, Fig. 3 and page 9, line 34 through page 10, line 1, however, the EA modulator includes a feature whereby an optical-absorption coefficient is increased and the transmittance is monotonously decreased, in response to a decrease in the drive voltage. Thus, the drive property of the EA modulator presented as an example in Applicants' specification (Fig. 15) does not appear to be appreciated.

Further, Applicants respectfully submit use of the conventional separating apparatus using the EA modulators as illustrated in Fig. 15 has problems, as described on page 4, line 31 – page 5, line 2 of the specification of the present application. In particular, to generate the drive signal supplied to the optical gate 101 on the previous stage, a frequency doubler 105 and an electric amplifier 106 for high frequency wave are required, so that the configuration of the apparatus becomes complicated, and the cost inevitably increases. The present invention resolves such problems.

In contrast to the present invention, Kajiya discloses subject matter relating to an externally modulating optical transmission apparatus using the MZ optical modulator. Regarding such disclosure, the Examiner has taken the position that Kajiya discloses the EA optical modulator for TDM transmitting where the EA optical modulator is used as the on/off gate (on page 4, lines 1-2 of the Office Action).

Applicants respectfully submit that Kajiya neither describes nor suggests the EA optical modulator used as the on/off gate. Further, since the apparatus disclosed by Kajiya is configured such that a continuous light emitted from a light source is externally modulated by the MZ optical modulator and then transmitted (see the Abstract and column 6, lines 12-16 of the specification), Kajiya neither describes nor suggests the feature regarding separation of the TDM signal light. Still further, the main object of Kajiya is to avoid chip problems of the optical transmission apparatus by using the MZ optical modulator, as stated by the Examiner on page 5, last line through page 6, line 2 of the Office Action. Thus, the object of Kajiya is far different from the object of the present invention stated above.

It is inappropriate to combine Applicants' background section with the information of Kajiya, which does not relate to the separation of TDM signal light (the object of which being clearly different from that of the present invention).

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

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Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

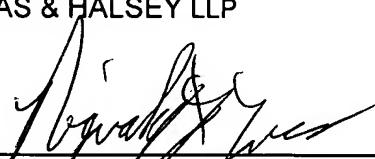
Respectfully submitted,

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